

USSR

UDC 669.71.049.6

TKACHENKO, V. M., MIKHAYLOV, N. S., TSEYTLIN, L. A., MERKULOVA, Ye. V.

"Corundum Packing Masses for Lining of a Reactor for the Subchloride Process of Distillation of Aluminum"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 208-217. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G170, by the authors).

Translation: A literature review is presented, and the characteristics of corundum packing masses are given as functions of the addition of H_3PO_4 , H_3BO_3 , $Al(OH)_3$, TiO_2 , SiO_2 , $AlCl_3$, MgO . Compositions of these masses are developed with high contents of Al_2O_3 . They have high density, and strength and low residual volume changes following roasting. 2 figs; 3 tables; 11 biblio refs.

1/1

1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EXPERIENCE WITH HEXONUM ELECTROPHORESIS IN HEALTH RESORT TREATMENT
OF PATIENTS WITH HYPERTENSIVE DISEASE -U-
AUTHOR--(05)-NEDOSTUPOV, S.P., ALEKSANDROVA, K.M., MERKULOVA, YE.YU.,
VAKHNOVSKAYA, O.I., ZYKIN, N.N.
COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 73-75

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ELECTROPHORESIS, HYPERTENSION, BLOOD PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3002/1636

STEP NO--UR/0475/70/000/004/0073/0075

CIRC ACCESSION NO--AP0129056

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0129056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX HEALTH RESORT TREATMENT INCLUDING HEXONIUM ELECTROPHORESIS RESULTED IN MOST CASES IN REDUCTION OF THE ARTERIAL PRESSURE. AN IMPROVEMENT OF THE PATIENTS CONDITION WAS OBSERVED IN 98.8PERCENT. THE EXPEDIENCY IS CONCLUDED OF INCLUSION OF HEXONIUM ELECTROPHORESIS IN THE COMPLEX OF HEALTH RESORT TREATMENT OF PATIENTS WITH HYPERTENSIVE DISEASE (STAGES I AND II). FACILITY: YALTINSKOGO TERRITORIAL'NOGO SOVETA PO UPRAVLENIYU KURORTAMI PROFSOZUZOV.

UNCLASSIFIED

USSR

UDC 621.372.85:621.372.826

MERKUR'YEV, A. N.

"Wave Type Converter made from Dielectric Wave Guides"

Tr. Mosk. energ. in-ta (Works of Moscow Power Engineering Institute), 1972, vyp. 100, pp 121-127 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7B135)

Translation: A study was made of the process of wave type conversion in a system of coupled single-wave and multiwave dielectric wave guides. It is noted that in order to simplify the analysis it is possible to use the fact that during operation of the converter with minimum losses in accordance with the practical requirements the waves in a single wave wave guide must be essentially connected only with one type of wave of the multiwave wave guide. Accordingly, the value of the linear coupling coefficient among the waves is defined experimentally. The measuring equipment and technique are described, and the results obtained are presented. There are 6 illustrations.

1/1

Luminescence

USSR

UDC 621.3.032.35:541.182.65

OSIPOV, B. S., MERKUSHEV, O. M., LAVOROV, I. S., and KRAVTSOV, V. D., Leningrad
Technological Institute imeni Lensevet

"Electrophoretic Precipitation of the Suspensions of Electroluminophores"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 46, No 4, Apr 73, pp 796-800

Abstract: The process of electrophoretic precipitation of electroluminophores from suspensions, and their behavior in electric field was studied in order to determine basic laws of the formation of electroluminescent panels (ELP). To obtain desired ELP by the electrophoretic method, it is necessary to use a luminophore with uniform distribution of the activator's concentration among its particles, or the direction of the electric field and the concentration of the suspensions have to be selected so that they would fall in the range of the aggregation of particles. The brightness of the ELP obtained in this fashion should exceed the brightness of the panels obtained by the pulverization method.

1/1

USSR

UDC: 666.638.678.027.5

SOKOLOVA, M. A., MERKUSHEV, O. M., NEYMAN, M. I., ASHKRUMOVA, A. Yu.,
SVERDLOVA, A. N.

"A Ceramic Suspension for Making Thin-Film Capacitors"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 16, Jun 71, Author's Certificate No 303663, Division H, filed 31 Jan 69,
published 13 May 71, p 187

Translation: This Author's Certificate introduces a ceramic suspension for making thin-film capacitors which is based on an organic solvent. As a distinguishing feature of the patent, a dielectric coating with a dense structure is produced by taking the initial components in the following quantitative ratios (in parts by weight): ceramic material--10-20, acetone--30-60, ammonium acetate--0.1-0.5, and the remainder amylacetate--up to 100 parts by weight of the total.

1/1

- 85 -

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--STABILITY OF COMPLEXES OF THORIUM AND URANIUM IV WITH DICARBOXYLIC
ACID ANIONS -U-
AUTHOR-(04)-MERKUSHEVA, S.A., KUMOK, V.N., SKORIK, N.A., SEREBRENNIKOV,
V.V.
COUNTRY OF INFO--USSR
SOURCE--RADIO KHIMIYA 1970, 12(11), 175-B
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COMPLEX COMPOUND, THORIUM COMPOUND, URANIUM COMPOUND,
DICARBOXYLIC ACID, ADIPATE, SUCCINATE, STABILITY CONSTANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1493

STEP NO--UR/0186/70/012/001/0175/0174

CIRC ACCESSION NO--AP0135154

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 013

CIRC ACCESSION NO--AP0135154

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOLY. DATA WERE USED TO CALC. THE STABILITY CONSTS. BETA SUB1 AND BETA SUB2 OF COMPLEXES OF THE MA PRIME2POSITIVE AND MA SUB2 TYPES, RESP., WHERE M STANDS FOR TETRAVALENT TH OR U AND A IS A DICARBOXYLIC ACID ANION. FOR TH SUCCINATE, TH GLUTARATE, TH ADIPATE, TH AZELAATE, U SUCCINATE, U GLUTARATE, U ODIPATE, AND U AZELAATE COMPLEXES, THE VALUES OF LOG BETA SUB1 (AT 25DEGREES) WERE 8.375, 8.765, 8.422, 9.604, 9.781, 8.812, 9.280, AND 9.078, RESP., AND THE VALUES OF LOG (BETA SUB2-BETA SUB1) WERE 8.434, 8.288, 6.616, 8.473, 8.818, 7.201, 5.867, AND 0.908, RESP.

UNCLASSIFIED

USSR

UDC 541.151+546.791.311

M
MERKUSHEVA, S. A., KUMOK, V. N., SKORIK, N. A., SEMBRECHNIKOV,
V. V.

"Stability of Complexes of Thorium and Uranium (IV) with Dicarboxylic Acid Anions"

Leningrad, Radiokhimiya, Vol 12, No 1, 1970, pp 175-178

Abstract: A previous article by the authors described methods for the synthesis of basic salts of dicarboxylic acids for cerium (IV), thorium and uranium (IV) and the solubility of these salts in 0.1 M solutions of (H, Na)ClO₄ at 25°C. Salts of succinic, glutaric, adipic and azelaic acids with the anion MA^{2-} have the general formula $(\text{MOH})_2\text{MA}_2 \cdot n\text{H}_2\text{O}$. The present article makes an analysis of the solubility data with allowance for the formation of two complexes of the type MA_2^{2-} and MA_2 with stability constants β_1 and β_2 respectively. The values of β_1 and β_2 were calculated by searching for pairs of values of $\log \beta_1$ and $\log \beta_2$ such as would provide minimum variance of $\log \text{SP}$ of the salt in a given range, with the solubility product (SP) being $1/2$

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MERKUSHEVA, S. A., et al., Radiokhimiya, Vol 12, No 1, 1970,
pp 175-178

considered equal to $\frac{1}{K^2} \frac{1}{K^3} / OH^2$: Rare-earth elements display a strong decrease in the stability of complexes of higher dicarboxylic acids as compared with oxalic acid. The same decrease in stability is observed in the case of thorium and uranium (IV), with the exception of azelates. In all cases (except the azelates) $\log \beta_1$ is greater for U⁴⁺ than for thorium.

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UDC 546.779.1 + 547.466:541.49-74.8

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MERKUSHEVA, S. A., SKORIK, N. A. and SEFEBRENNIKOV, V. V.

"Uranium (IV) Hexamethylenediaminetetraacetate"

Leningrad, Radiokhimiya, Vol XI, No 5, pp 600 - 601

Abstract: $U(H_{20}C_{14}O_8N_2)_4$ was synthesized, and its solubility in solutions

of $(H, Ha)ClO_4$ at 25°C and ionic force 0.1 was studied.

The stability constant was found to be $(4.4 \pm 0.47) \cdot 10^{24}$, and the
solubility product $(3.3 \pm 0.02) \cdot 10^{-28}$.

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AA0049387

NR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

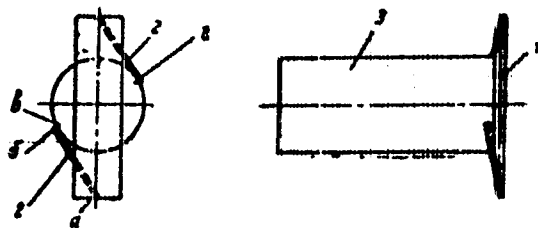
240874 ELECTROMECHANICAL FILTER is simplified and made smaller. Longitudinal oscillation converter 1 is coupled to resonator 3 by ties 2 by which the push-pull effects of the converter brings about a rotational oscillation in the resonator. The ends marked a of the ties are secured to the converter and the ends marked b are joined to diametrically opposite points (v.g.) of the resonator. 9.12.67. as 1201984/26-9.
M.M. BOGACHIKHIN, Yu. N. MERKUSHLIN (20.8.69.)
Bul.13/1.4.69. Class 21g. Int.Cl. H03h.

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19801216

AA0049387



EB

2/2

19801217

USSR

UDC 616.89

MERLA, D. E., and GRINBERG, D. M., Chair of Psychiatry, Kishinev Medical Institute, and Republic Mental Hospital No 1

"Comparative Clinical and Electroencephalographic Examination of Patients with Mental Disorders Caused by Toxoplasmosis"

Kishinev, Zdravookhraneniye, No 4, 1971, pp 25-27

Abstract: EEG examination of 51 patients 11 to 55 years of age suffering from epilepsy and other mental disorders, congenital or acquired, due to toxoplasmosis revealed severe disturbances of bioelectrical activity consisting of diffuse and dysrhythmic shifts in the brain action potentials with disorganization of the rhythms. The alpha rhythm was either absent or irregular. Disorganization of the rhythms included hypersynchronous slow potentials (especially in the epileptics) in the form of irregular theta and delta waves. Against a background of diffuse impairment of bioelectrical activity, fairly pronounced bilaterally symmetrical electrical discharges were noted in leads from the central-frontal and parietotemporal regions of the cortex, an indication of change in the mesodiencephalic structures. Regular or paroxysmal waves, generally slow, in the temporal, parietal, and frontal

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USSR

MERLA, D. F., and GRINBERG, D. M., Zdravookhraneniye, No 4, 1971, pp 25-27

leads were common in the epileptic syndrome. The predominance of slow waves in all the patients suggests the presence of a diffuse, degenerative process in the brain associated with cerebrospinal fluid and vascular disturbances.

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Psychology

USSR

MERLIN, V. S., Permsk Pedagogical Institute

"Types of Dependence of Properties of Temperament on Properties of the Nervous System"

Moscow, Voprosy Psikhologii, No 6, Nov/Dec 73, pp 39-50

Abstract: On the basis of experimental investigations and literature data the author identifies three types of dependences of properties of temperament on properties of the nervous system which he expresses mathematically in three ways. (1) He expresses them in intercorrelations, (2) in an integral linear dependence of the totality of temperamental indexes on the properties of the nervous system (discriminants), and (3) in an integral curvilinear dependence of the totality of the indexes of the properties of temperament on the properties of the nervous system (taxons). He finds these types to be in hierarchical relationship to one another. He also found that the psycho-physiological dependences of the properties of temperament on the properties of the nervous system and the psychological interdependences of the properties of temperament are homomorphous but not isomorphous.

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Acc. Nr: **10047300**

Ref. Code: UR 0245

PRIMARY SOURCE: Voprosy Psikhologii, 1970, Nr 1, pp 21-27

THE RELATIONSHIP BETWEEN TYPE
AND INDIVIDUAL FEATURES OF TEMPERAMENT

V. S. MERLIN

Summary

A hypothesis was put forward that the regular relationship between psychological features of a certain temperament type can be expressed by means of a mathematical invariant model. This hypothesis was confirmed by experimental data obtained in two test groups: strong, balanced, mobile (temperament type I) and strong, balanced, inert (temperament type II).

A relatively stable integral index of lineary discriminator (in terms of O. M. Kalinin's formula) was calculated for each of these types in each subject. It follows from an invariant model that the temperament type is characterized not only by correlated psychological features but also by non — correlated ones. This hypothesis is borne out by data of another investigation of subjects with mobile and inert nervous processes.

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REEL/FRAME
19790818

1. T 2

USSR

UDC: None

MERMANISHVILI, L. L., TIGILAURO, G. A., SIMONISHVILI, T. G.,
KVANTALIANI, G. A., and KOVSHOV, L. F.

"Device for Recording Information on Electrochemical Paper"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obrastay, tovarnyye znaki,
No 4, 1973, p 117, No 364003

Translation: The item contains number registers connected with decoders whose outputs are joined to shapers connected through AND circuits with the inputs of the recording unit, which is connected with scaling and synchronization units, distinguished in that, for the purpose of providing printed information in the form of combinations of points in two colors, it contains an automatic marking unit connected with the inputs of a nulling device for the number registers and with controlling inputs from each of the decoders.

The device of paragraph 1 above is distinguished in that the count input of the channel counter in the automatic marking unit is connected, through one of the delay lines, to one of the AND and OR circuits respectively, the outputs of which are connected through a decoder to the second inputs of the AND circuits, whose outputs are connected with the other inputs of the OR circuits.

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USSR

UDC: 911.3.616.9-022.39(470)

KOMPANTSEV, N. F., SLESARENKO, V. V., MERTKOVA, A. M.

"Long-range Plans for Eradicating Individual Zoonotic Infections (Brucellosis, Anthrax, and Tularemia) in USSR Territory"

V sb. Materialy XV Vses. S'ezda Epidemiologov, Mikrobiologov i infekttsionnykh, tezisy dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiologists, Microbiologists and Specialists in Infectious Disease, Thesis Report Part I -- collection of works) Moscow, 1970, pp 114-115 (from RZh-Meditainskaya geografiya, No 1, Jan 71, Abstract No 1.36.82)

[No abstract]

1/1

USSR

UDC 621.31: (621.2+629.1).001

MERSHAVKA, K. S.

"Total Weight of the Electrical Supply System of a Transport Facility"

Moscow, Energetika i Transport, No 2, 1972, pp 188-197

Abstract: A procedure for evaluating the total weight of the electrical supply system of a transport facility is presented, account not being taken of the increase in the design weight of the transport facility. The total weight of the electrical supply system is understood to mean the sum of the weight of the generating equipment and of the network and distributing devices, that part of the weight of the prime movers that depends upon the power takeoff for driving and cooling the generating equipment, and the weight of the fuel expended for generating the electric power, cooling the generating equipment, and transporting the specified weight and the supplementary weight of the electrical supply system during the time of movement of the transport facility. The proposed procedure is illustrated by an example. 3 figures. 2 tables. 8 references.

1/1

AN0034022

UR 9003

AUTHOR-- MERTS, V.

TITLE-- A RESEARCH CENTER

NEWSPAPER-- IZVESTIYA, MARCH 22, 1970, P 1, COLS 6-8

ABSTRACT-- LAST YEAR THE KOMI AFFILIATE OF THE ACADEMY OF SCIENCES, U.S.S.R., CELEBRATED ITS 25TH ANNIVERSARY. ACCORDING TO KONSTANTIN ALEKSEYEVICH MOISEYEV, DEPUTY CHAIRMAN OF THE AFFILIATES PRESIDIUM, THE AFFILIATE HAS MORE THAN 200 SCIENCE ASSOCIATES ON ITS STAFF, AMONG THEM 83 DOCTORS AND CANDIDATES OF SCIENCES.

30 Feb

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19710658

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTROCHEMICAL FLUORINATION OF DIMETHYLANILINE,
DIMETHYLCYCLOHEXYLAMINE, AND N,N-DIMETHYLPENTAFLUOROANILINE -U-
AUTHOR--(05)-PLASHKIN, V.S., PUSHKINA, L.N., MERTSALOV, S.L., KOLLEGOV,
V.F., SOKOLOV, S.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1006-11
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUORINATION, ANILINE, AROMATIC AMINE, NUCLEAR MAGNETIC
RESONANCE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1345 STEP NO--UR/0366/70/006/005/1006/1011
CIRC ACCESSION NO--AP0135019
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135019

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROCHEM. FLUORINATION OF
THE TITLE COMPODS. AT MINUS 20DEGREES GAVE IN ALL CASES OF SUB3 (CF SUB2)
SUB5 N(CF SUB3) SUB2 AND N,N-DIMETHYLPERFLUOROCYCLOHEXYLAMINE. THE
YIELDS AND RELATIVE AMTS. OF THESE COMPODS. VARY WITH THE STARTING
MATERIAL AND THE REACTION TIME. NMR SPECTRA OF THE PRODUCTS ARE
DISCUSSED. FACILITY: URAL. POLITEKH. INST. IM. KIROVA,
SVERDLOVSK, USSR.

UNCLASSIFIED

USSR

UDC 542.91+661.718.1

NIKONOROV, K. V., GURYLEV, E. A., MERTSALOVA, F. F., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences, USSR

"Preparation of Phosphorylated Chloral Mercaptals"

Moscow, Izvestiya Akademiyi Nauk SSSR, Seriya Khimicheskaya, No 5, May 70.
pp 1159-1161

Abstract: The reaction of dialkyl chlorophosphites with 2,2,2-trichloro-1-hydroxyethyl alkyl sulfides -- hemimercaptals of chloral -- yielded the corresponding phosphites. These phosphites can be oxidized and can combine with sulfur to form the corresponding phosphates and thiophosphates.

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USSR

UDC 547.26'118 + 541.127

NIKONOROV, K. V., GURYLEV, E. A., and MERTSALOVA, F. F., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy of Sciences, SSSR Kazan'

"Reaction of Dialkyl- or Diaryl 1-Alkoxy-2,2,2-trichloroethyl Phosphites With Halogen Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 12, Dec 72, pp 2661-2664

Abstract: Investigating the reaction of dialkyl- and diaryl 1-alkoxy-2,2,2-trichloroethyl phosphites with halogen compounds -- benzyl bromide, acetyl chloride, acetyl bromide, benzoyl chloride, and chloral -- it was shown that the reaction of dialkyl 1-alkoxy-2,2,2-trichloroethyl phosphites with alkyl halides takes place with a strong electron donor radical being eliminated. The reaction of dialkyl- and diaryl 1-alkoxy-2,2,2-trichloroethyl phosphites with acyl halides takes place with the elimination of 1-alkoxy-2,2,2-trichloroethyl radical. With chloral the phosphites yield respective dichlorovinyl phosphates.

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- 51 -

MERTSALOVA V.

RISC TRANSLATION NO. 305

TRANSLATOR:

DNA

ORIGINAL LANGUAGE:

Russian

APPROVED CLK
DATE 11 NOVEMBER 1977



DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SERVICE
TRANSLATION DIVISION
4301 SULLY ROAD
WASHINGTON, D.C. 20340

CLASSIFICATION:

UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE:

EFFECT OF LATER FORMS OF INTELLIGENCE COLLECT
VORODYEVSKIY IZVESTIY VOYENNOGO KONTAKTORA (Glasnost)
na Pionerskoye Svyaz'

AUTHOR(S):

PIVZHEN, L. A.; DEMENOV, V. P.; BISHAYEV, L. M.;
LAVRENKO, G. S.; KONDYUN, V. V.; NOSTAL, A. L.;
ROMANOV, G. V.

PAGES:

20

SOURCE:

FORCES DELIVERED AT 470L 400L, RUSSIAN TON
27 APRIL 1971

ASERB

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[illegible]

Exposure of the human population to ionizing radiation from natural and artificial sources is subjected to the action of a number of factors. The most important of these factors are the physical, chemical and biological effects of the ionizing radiation, the characteristics of the human population and, consequently, the degree of its resistance to the damage to the cellular and molecular structure caused by the action of the ionizing radiation.

Investigation of the concentration of free radicals in irradiated polyethylene has shown that the number of free radicals is not directly proportional to the dose of radiation. The physical and chemical properties of the irradiated polymer have been studied.

The results of the investigation described above facilitate a deeper understanding of the problem of the effects of light on the activity and properties of living matter, since it also shows the essential picture of such effects on biochemical processes. Research frequently departing from this has allowed the investigation of the scientific interest involved in an explanation of the mechanism of action of a powerful light flux on structures of the investigated object has important practical applications in areas of biology and medicine, especially related to the problem of ensuring optimum protection against light effects.

The introduction of lasers into the arsenal of scientific laboratories has made it possible to begin investigations dealing with the effect of powerful light fluxes on biological objects. In this matter the development of specific technical conditions for laser operation

MERTSAKOVA, L.V.

ULTRAMICROSCOPIC INVESTIGATION OF THE HARDING-PASSEY MELANOMA
THE EFFECT OF LASER RADIATION

(Article by L. A. PIRUYAN, V. V. TOROVIN, G. V. BOMBOVA, L. V. MERTSAKOVA, and V. A. LEBEDEV, Journal of Biomedical Laser Research, Vol. 1, No. 1, 1971, pp. 1-6)

The article examines the effect of laser radiation on the ultrastructure of the Harding-Passey melanoma. It has been established that irreversible changes occurred in the zones not directly irradiated. The most damaged organelles of a Harding-Passey melanoma cell were the mitochondria, whereas the nuclei, cytoplasm, the nucleus and the nucleolus, as well as the virus-like formations, revealed no morphological changes. Strong vacuolization was noted in the cell plasma. A decrease of temperature changes in the melanoma tissue according to the distance from the center of the laser lesion is presented. The laser lesion which occurred in the melanoma cell under the effect of the laser are explained as the effect of the mechanical factor.

The creation of lasers has permitted biophysicists to begin investigations connected with the effect of powerful luminous fluxes on biological objects. The literature contains information about the histological changes of melanoma (melanomas) after irradiation by a laser (Piruyan et al., 1971) and also on the free-radical content in an irradiated melanoma (Piruyan et al., 1968). Therefore it is of interest to study the effects in a tumor on the ultrastructural level.

In the present work a Harding-Passey melanoma was subjected to laser irradiation in order to investigate the electron

JMS 57928

8 Jan 73

- 1 -

USSR

UDC: 616.006

PIRUZYAN, L.A., ROGOVEN, V.V., ROMANOV, G.V., MERISALOVA, L.V., and DEMIT'YEV, V.A., Institute of Chemical Physics, Academy of Sciences, USSR

"Electron Microscope Study of Harding-Passy Melanoma Under the Influence of Lasers"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, May/Jun 70, pp 463-467

Abstract: The effect of laser irradiation on the ultrastructure of Harding-Passy melanoma was studied. It was found that the zones which had not been irradiated directly contained irreversible changes. Mitochondria were most damaged, and their organization disrupted, whereas the myelin structures, nucleus and nucleoli, and virus-like formations showed no morphological changes. A strong vacuolization in the cytoplasm of the cells was noted. Temperature changes in melanoma tissue are proportional to the distance from the center of laser action. All changes in melanoma tissues under the action of lasers are explained on the basis of the thermomechanical effect.

1/2 039
UNCLASSIFIED
TITLE--ELECTRONMICROSCOPICAL INVESTIGATION OF THE GARDING PASSY MELANOME
UNDER THE INFLUENCE OF A QUANTUM GENERATOR --U-
AUTHOR--(051)PIRUZYAN, L.A., ROGOVIN, V.V., ROMANOV, G.V., MERTSALOVA,
L.V., DEMENTYEV, V.A.
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3,
PP 463-467
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, PHYSICS
TOPIC TAGS--LASER RADIATION, ELECTRON MICROSCOPE, TUMOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1176

STEP NO--UR/0216/70/000/003/0463/0467

CIRC ACCESSION NO--AP0126/78

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 039

CIRC ACCESSION NO--AP0126778

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT OF LASER IRRADIATION ON THE GARDING PASSY MELANOMA ULTRASTRUCTURE IS DISCUSSED. IT WAS FOUND THAT THE ZONES WHICH HAD NOT BEEN DIRECTLY ILLUMINATED CONTAINED IRREVERSIBLE CHANGES. AMONG THE ORGANELLES OF A GARDING PASSY MELANOMA CELL THE MITOCHONDRIA APPEARED TO BE MOST DAMAGED WHEREAS THE MYELIN STRUCTURES THE NUCLEUS AND THE NUCLEOLI AS WELL AS VIRUS LIKE FORMATIONS REVEALED NO MORPHOLOGICAL CHANGES. STRONG VACUOLIZATION OF THE CELL CYTOPLASM WAS STATED. A DIAGRAM OF THE TEMPERATURE CHANGES IN THE MELANOME TISSUE RELATIVE TO THE DISTANCE OF THE EPICENTER OF THE LASER LESION IS SHOWN. THE LESIONS CAUSED IN THE MELANOME CELL UNDER LASER ACTION ARE EXPLAINED ON THE BASIS OF THE EFFECT OF THE THERMOMECHANICAL FACTOR.

FACILITY: INSTITUTE OF CHEMICAL PHYSICS, ACADEMY OF

SCIENCES, USSR.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ELECTROLYSIS OF MOLYBDENUM, VI, WITH A MERCURY CATHODE IN THE
PRESENCE OF NICKEL AND COBALT -U-
AUTHOR--(03)-SPERANSKAYA, YE.F., MERTSALOVA, V.YE., KISELIEVA, A.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43 (4), 896-8
DATE PUBLISHED-----79
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--ELECTROLYSIS, MERCURY, NICKEL, COBALT, ELECTRODEPOSITION,
AMALGAM, NICKEL COMPOUND, COBALT COMPOUND, CITRIC ACID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/0975 STEP NO--UR/0080/70/043/004/0896/0898
CIRC ACCESSION NO--AP0131560
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 025

CIRC ACCESSION NO--AP0131560

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECT OF NI(II) OR CO(II) ON

THE ELECTRODEPOSITION OF MO(VI) ON A HG CATHODE IN CITRIC ACID SOLNS. AT

70DEGREES WAS INSIGNIFICANT. NO SIGNIFICANT INCREASE OF MO IN THE

TERNARY AMALGAM WAS FOUND OVER THAT FOUND IN THE BINARY AMALGAM. THE

REASON FOR THIS LACK OF INCREASE IN MO DEPOSITED WAS DUE TO SELF

DISSOLN. OF THE FRESHLY DEPOSITED MO. THE DISSOLN. OF THE TERNARY

AMALGAMS IN N KOH YIELDED THE HYDROXIDES OF NI OR CO AND MOLYBDATE ION.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--USE OF THE METHOD OF CROSS SECTIONS TO STUDY THE TWO PHASE LIQUID
STATE IN CONDENSED FOUR COMPONENT SYSTEMS --U-
AUTHOR--(03)--MERTSLIN, R.V., KAMAEVSKAYA, L.A., NIKURASHINA, N.I.
COUNTRY OF INFO--USSR
SOURCE--Zh. Fiz. Khim. 1970, 44(1), 79-82
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PHASE EQUILIBRIUM, FLUID STATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0007 STEP NO--UR/0076/70/044/001/0019/0082
CIRC ACCESSION NO--AP012407
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 011

CIRC ACCESSION NO--APC132307

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. A GENERAL GRAPHICAL METHOD FOR THE

DETN. OF THE COMPN. OF EQUIL. PHASES IS DESCRIBED. FACILITY:

SARATOV. GOS. UNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

USSR

UDC: 536.46

YUKHVID, V. I., MAKSIMOV, E. I., MEZCHANOV, A. G., and KOZLOV, V. S., Moscow

"Formation of a Semi-Liquefied Layer During the Combustion of Condensed Systems With Solid Non-agglomerating Admixtures in a Field of Mass Forces"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 496-501

Abstract: The authors conduct an experimental study to explain the regularities associated with the pseudo-liquefied layer and its effect on combustion. This study is based on an earlier work by V. I. Yukhvid et al., Fizika Goreniya i Vzryva, Vol 9, No 2, 1973, where the authors observed that the rate of combustion of ammonium perchlorate with a refractory metal admixture (titanium) increases as the overload is increased where the overload is set up by centrifugal acceleration. On the basis of the results of that study, a mechanism is proposed for the combustion of the composition under the effect of mass forces. In the current study, inert refractory particles were used in the form of aluminum oxide. The test was conducted on a centrifuge. The combustion rate was measured by photoregistration. The overload vector in all of the tests was directed along the normal to the combustion surface, in the front propagation direction. The specimens were in the form of cylindrical tablets 0.8 cm in diameter and 2.4-2.5 cm high. These had been pressed to the point of maximal density. The results show that the motion of the com-

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USSR

YUKHVID, V. I., et al, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 496-501

bustion front is uniform and that the effect of mass forces is complex in nature. A fall in the rate of combustion follows the combustion rate increase segment. These results can be explained by the properties of the pseudo-liquefied layer and the effect that they have on the combustion process.

2/2

UIC: 532.135

USSR

MERZHANOV, A. G., POSETEL'SKIY, A. P., STOLIN, A. M., SHTEYNBERG, A. S.,
Affiliate of the Institute of Chemical Physics, Academy of Sciences of the
USSR, Chernogolovka, Moskovskaya Oblast

"Experimental Realization of a Hydrodynamic Thermal Explosion"

Moscow, Doklady Akademii Nauk SSSR, Vol. 210, No 1, May 1973, pp 52-54

Abstract: In studying the problem of nonisothermal Poiseuille flow in a circular pipe with a given pressure gradient, it has been discovered that there is no stationary solution at certain values of the parameters. The phenomenon of hydrodynamic thermal explosion has been predicted on the basis of this theoretical research. It has also been theoretically demonstrated that this effect could arise in Couette flow with time-constant shear stress on a moving boundary. However, up until now this phenomenon had not been experimentally confirmed. In this paper the authors describe the successful realization of the conditions which produce this effect and give quantitative verification of the theory. The research was done on a rotation viscometer with pneumatic drive ensuring constant torque. The basic distinguishing feature of the installation is the design of the outer

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USSR

MERZHANOV, A. G. et al., Dokl. AN SSSR, May 73, Vol 210, pp 52-54

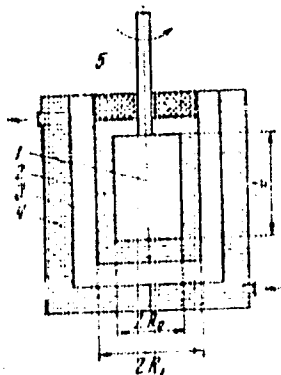
cylinder (see figure) which is made in the form of a Dewar flask with outer thermostatically controlled jacket 4. The inner rotating cylinder 1 is a hollow steel cup connected by ebonite rod 5 to the rotor of a small gas turbine. The diameter of the outer cylinder $2R_1 = 4.84$ cm, the diameter of the inner cylinder $2R_0 = 3.9$ cm, and the length of the inner cylinder $l = 7.2$ cm. The gap 2 is filled with the liquid to be studied to a level somewhat higher than the top of the inner cylinder. The rpm n of the inner cylinder was measured by a perforated disc on the shaft and a photocell with output to a frequency meter. Temperature differential was measured by a thermocouple with one junction on the inside wall of the Dewar flask and the other inside the thermostatically controlled jacket. The resultant curves for temperature differential and rotational velocity as functions of time demonstrate the effect of hydrodynamic thermal explosion.

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USSR

MERZHANOV, A. G. et al., Dokl. AN SSSR, May 73, Vol 210, pp 52-54



1--inner cylinder; 2--fluid to be studied; 3--air space; 4--jacket with heat-transfer agent; 5--ebonite rod

3/3

USSR

UDC 532.596.2

MERZHANOV, A. G., SHITESSEL', E. A., Moscow

"Thermal Explosion in Liquid Reacting Systems with Thermal Convection"

Fizika Goreniya i Vzryva, No 1, Mar 71, pp 68-76.

ABSTRACT: This work presents a study of the influence of free convection in a reacting medium on the conditions of development of thermal explosion. The main task of the investigation is the establishment of a relationship between the limit of the thermal explosion and quantities characterizing natural convection. Analysis of experimental results produced on specially selected models is used to establish the form of the function $f(Ra)$ for the planar and cylindrical cases, and certain problems of the mechanism of thermal explosion in the presence of convection are discussed.

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Explosives and Explosions

USSR

UDC 541.427.6

MERZHANOV, A. G., ZELIKMAN, Ye. G., and ALEKSANDROVSKAYA, Ye. D.

"Theory of Degeneration of Thermal Explosion"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, No 2, Feb 71, pp 379-382

Abstract: Experimental data are reported in support of the sequence proposed by the authors for the degeneration of thermal explosion. The kinetics and thermal explosion were studied of two model reactions of tetryl; an auto-catalytic reaction and a first-order reaction. Degeneration characteristics were determined from the experimental data for the reactions tetryl-picric acid and tetryl-limestone. Experimentally obtained values agreed well with the theoretically calculated ones.

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UDC 536.46

USSR

MERZHANOV, A. G., and SHTESSEL', E. A., Institute of Chemical Physics,
Moscow Academy of Sciences USSR

"Thermal Explosion in the Liquid Phase in the Presence of Natural Con-
vection"

Moscow, Doklady Akademii Nauk SSSR, Vol 194, No 1, Sep-Oct 70, pp 130-
139

Abstract: The article analyzes experimental data obtained on special-
ly selected models to establish the form of the function $f(Ra)$ for the
two-dimensional case. The models chosen were mixtures of hexamethyl-
ene diisocyanate with various alcohols in 1:2 ratios. Questions on
the mechanism of a thermal explosion in the presence of convection are
discussed, viz. the effective coefficient of internal heat transfer,
the influence of the rate of internal heat emission, the temperature
distribution in the reaction zone.

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1/2 011 UNCLASSIFIED
TITLE--TANTALUM MONONITRIDE PREPARATION --U-

PROCESSING DATE--2/19/70

AUTHOR--(05)--MERZHANOV, A.G., BUTAKOV, A.A., SHEKHTMAN, V.SH.,
BOROVINSKAYA, I.P., RABINKIN, A.G.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,365
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TANTALUM COMPOUND, CHEMICAL PATENT, NITRIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1444

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126975

UNCLASSIFIED

2/2 011
CIRC ACCESSION NO--AA0126975
ABSTRACT/EXTRACT--(U) GP-0-
IS PREPD. BY HEATING TA IN N.
KHIMICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

PROCESSING DATE--27NOV70

ABSTRACT. CUBICALLY MODIFIED TA MONONITRIDE
FACILITY: FILIAL INSTITUTA

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EMERGENCE AND DEVELOPMENT OF THERMAL CONVECTION IN A LAYER OF
VISCOUS LIQUID -U-
AUTHOR--(02)--MERZHANOV, A.G., SHTESSEL, E.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 779-82 (MECH)
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMAL CONVECTION, VISCOUS FLUID
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/0167 STEP NO--UR/0020/70/191/004/0779/0782
CIRC ACCESSION NO--AT0127791
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0127791

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. T SUBK AT DIFFERENT HEIGHTS (H) OF LIQS. OF DIFFERENT VISCOSITIES (ν) WAS MEASURED BY A MOVABLE CU CONSTANTAN THERMOCOUPLE IN A CEL (23 TIMES 19 TIMES 4 CM) IN CONTACT WITH AIR AT T SUBO. THE EFFECT OF CONVECTION, D SUBM, BECAME APPARENT AFTER AN INDUCTION PERIOD τ SUBIND AND ROSE SHARPLY BEYOND A CRIT. RAYLEIGH NO., R ALPHA SUBCR. FOR LIQS. WITH A PRANDTL NO. PR LARGER THAN 10 $PRIME^2$, R ALPHA SUBCR WAS INDEPENDENT OF PR AND WAS 1150. AT τ SUBIND, THE LIQ. IN THE CELL INCREASED IN TURBULENCE. EXPTL. T SUBIND EQUALS $A R$ ALPHA $PRIME^2$ PR $PRIME$ EQUALS AIG BETAIT SUBO MINUS T SUBK) $PRIME$ NEGATIVE V $PRIME$ FIVE SIXTHS ALPHA $PRIME$ NEGATIVE, WHERE A EQUALS 70, M EQUALS TWO THIRDS, N EQUALS ONE SIXTH, BETA EQUALS COEFF. OF VOL. EXPANSION, AND ALPHA EQUALS COEFF. OF HEAT TRANSFER. FACILITY: FILIAL INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

1/2 046 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--IGNITION OF CONDENSED SUBSTANCES BY A DISPERSED FLOW -U-
AUTHOR-(03)-BARZYKIN, V.V., GOLDSHLEGER, U.I., MERZHANOV, A.G.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 111-14
DATE PUBLISHED-----70
SUBJECT AREAS--ORDNANCE, PROPULSION AND FUELS
TOPIC TAGS--NITROCELLULOSE, IGNITION LAG, POROSITY, EXPLOSIVE, HEAT
TRANSFER RATE, POLYVINYL NITRATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/2128 STEP NO--UR/0020/70/191/001/0111/0114
CIRC ACCESSION NO--AT0127497
UNCLASSIFIED

2/2 046

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0127497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITROCELLULOSE OR POLY (VINYL NITRATE) TABLETS WERE INJECTED INTO A STREAM OF AIR, MOVING AT 1-3 M-SEC AND CARRYING ALUMINOSILICATE (I) PARTICLES 60-300 MU IN DIAM. THE TIME (T) REQUIRED BY THESE EXPLOSIVES TO IGNITE WAS DETD. THE TEMP. OF THE GAS SOLID STREAM VARIED FROM 250 TO 650DEGREES. THE CHANGES IN T DEPENDED ON THE HEAT TRANSFER RATES BETWEEN THE EXPLOSIVES AND THE STREAM. THIS IN TURN DEPENDED ON THE SURFACE POROSITY AND SOFTNESS OF THE EXPLOSIVES WHICH COULD CAPTURE I PARTICLES AND THUS INCREASE THE HEAT TRANSFER RATE.

FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

MERZHANOV, A.G.

8401 / 18-066 / 5-0140001

III. SHOCK WAVES IN LIQUIDS

Andriankin, E. I., V. K. Bobolev, and
A. V. Dubovik. Collapse of an elliptic
cavity and explosive initiation in a
liquid layer under shock effect. ZhPMTF,
no. 5, 1971; 78-85.

Analytical and experimental results are given on the effect of shock excitation of a combustible liquid volume. Criteria are developed for the threshold conditions under which a nominally spherical fluid volume shifts to an elliptical form, and on further compression develops into a cumulative jet; in the limit this results in detonation from adiabatic heating of gas evolved in the volume. Test data on shock generation of jets in liquid nitroglycerine are included, and show qualitative agreement with theoretical results.

Shesael', E. A., K. B. Pribykova, and
A. G. Merzhanov. A numerical solution
to the problem of a thermal explosion with
free convection taken into account. FZIV,
no. 2, 1971, 167-178.

The authors cite previous works in which the effect of free convection on a gas explosion process is expressed in terms of the Rayleigh (Ra) and Frank-Kamenetsky (k) criteria. The analysis is extended here to the case of liquid fuel combustion, and is presented as a supplement to earlier experimental work by Merzhanov and Shesael' (FZIV, no. 1, 1971) in which an empirical correlation between Ra and k was obtained. The model used assumes an ideal stationary fluid in a uniform semi-infinite vessel; gas evolution is neglected. The results are shown graphically, indicating the conditions under which convection will or will not affect the detonation process.

UDC 536.46:533.6

USSR

MERZHANOV, A. G., GAL'CHENKO, Yu. A., GRIGOR'YEV, Yu. M., MASHKINOV, L. B.

"Ignition of an Aluminum Wire"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works),
Moscow, "Nauka", 1972, pp 245-249 (from RZh-Mekhanika, No 3, Mar 73, Abstract
No 3B941)

Translation: The ignition of an aluminum wire in a pure hydrogen flow at
atmospheric pressure was studied by an electrothermographic method. The igni-
tion temperatures and the critical electrical powers were determined as a
function of the rate of flow of the gas and the diameters of the wires. The
ignition parameters were determined as a function of the initial thickness of
the oxide film on the wire for different methods of application. 7 ref.
Authors' abstract.

USSR

UDC 536.46:533.6

BLOSHENKO, V. N., MERZHANOV, A. G., PEREGUDOV, M. I., KHAYKIN, B. I.

"Toward a Theory of the Gas-Phase Combustion of a Drop"

V sb. Goreniye i vzryv (Combustion and Explosion --- Collection of Works),
Moscow, "Nauka", 1972, pp 227-233 (from RZh-Mekhanika, No 3, Mar 73, Abstract
No 3B938)

Translation: The gas-phase combustion of a drop of liquid fuel close to critical conditions is considered on the basis of the inertia of the gas medium, and the validity of substituting the equations of multicomponent diffusion for the equations of independent diffusion ordinarily used is also analyzed. A computer solution to the problem is given. It is shown that it is impossible to neglect the inertia of the gas medium in problems concerning the combustion of a droplet and also that the drop is completely evaporated under critical conditions at the moment of combustion, and that the combustion picture at small distances from the limit considerably depend on the magnitude of the total pressure in the gas phase (or in the evaporation intensity which is defined as the evaporation intensity in the absence of chemical reaction).

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USSR

BLOSHENKO, V. N., et al, Gorenije i vzryv, Moscow, "Nauka", 1972, pp 227-233

It is shown that the multicomponent property of the gas medium has a considerable effect on the combustion process. 14 ref. Authors' abstract.

2/2

USSR

UDC: 541.126

AZATYAN, V. V., GONTKOVSKAYA, V. T., and MERZHANOV, A. G.

"Conditions for the Origin of Thermal Explosion in the Course of a Chain-Branching Reaction"

Novosibirsk, Fizika goreniya i vzryva, No 2, 1973, pp 163-169

Abstract: Using the example of one of the kinetic systems of heat explosions in complex chemical reactions, the authors consider the critical conditions of the explosion in the course of chain-branching reactions with uniform breaks of the chain. The effect of spontaneous heating on the process with no thermal explosion is also examined. The temperature gradients and the concentrations of the active centers of the chains in the reaction space are not taken into account; the part played by these gradients and the errors involved in averaging the temperature field are to be dealt with in another paper. This theoretical analysis begins with a system of six equations representing the reaction mechanism; from these is obtained a system of kinetic differential equations which was solved, together with the equation of thermal equilibrium, on an electronic computer.

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USSR

UDC: 541.124

MERZHANOV, A. G., SHTEYNBERG, A. S., and GONCHAROV, Ye. P.

"Peculiarities of High-Temperature Dissociation of Ammonium Perchlorate and Heterogeneous Systems Derived from it"

Novosibirsk, Fizika gorenija i vzryva, No 2, 1973, pp 185-191

Abstract: The purpose of this theoretical article is to analyze the effect of dissociative sublimation on the macrokinetic high-temperature decomposition of ammonium perchlorate (APC) and model mixtures derived from it. Dissociative sublimation is the distinctive peculiarity of APC decomposition. The method of the authors is to use the physical representations of the "volume vaporization" effect developed in an earlier article (A. G. Merzhanov, et al, FGV, 4, 4, 1968) in the decomposition process of volatile explosive materials in the condensed phase. Although APC does not melt at temperatures below 550° C, the general run of its decomposition is similar to that of secondary explosive materials. The present article examines the effect of pressure on APC high-temperature decomposition and the decomposition of APC-polymer mixtures. Tables are given for experimentally determined values of the thermal effects of the decomposition, and for the

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USSR

UDC: 541.124

MERZHANOV, A. G., et al, Fizika goreniva i varyva, No 2, 1973, pp
185-191

decomposition characteristics of the various mixtures considered.
Both stages of the decomposition are discussed.

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USSR

UDC: 662.612.3

YUKHVID, V. I., MAKSIMOV, E. I., MERZHANOV, A. G., KHAYKIN, B. I.,
and KOZLOV, V. S.

"Combustion Mechanism of Condensed Systems With Solid Admixtures
in a Mass Force Field"

Novosibirsk, Fizika goreniya i vzryva, No 2, 1973, pp 235-240

Abstract: This paper presents the results of experiments to study the rarely examined case of the combustion of systems with non-agglomerating admixtures. The experiments were conducted in a mass force field on compositions of ammonium perchlorate and titanium. The assumption of non-agglomeration is based on the fact that the melting point of Ti is, at 1700°, much higher than that of the perchlorate, at 1100° C. A diagram of the centrifuge in which the experiments were conducted is given together with a description of the experimental method. The rate of combustion was measured by film photography. The reader is referred to an earlier paper (B. B. Serkov, et al, FGV, 1968, 4, 4) for a more detailed description of the apparatus and methodology. The combustion rate was measured as a function of accelerations in the interval of 36 to 1200 g at room temperature. A model of the combustion process is devised to explain the experimental results.

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UDC 629.7.036.536.46

USSR

BLOSHENKO, V. N., MERZHANOV, A. G., PEREGUDOV, N. I., and KHAYKIN, B. I.

"Formation of an Unsteady Diffusive Combustion Front During the Ignition of a Drop of Liquid Fuel"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972--Sbornik(11th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972--Collection of Articles), 1972, pp 42-43 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.11. Resume)

Translation: A theoretical investigation is conducted of the process of the formation of an unsteady diffusive combustion front during the ignition of a quiescent drop of evaporating liquid fuel in an inorganic gaseous atmosphere containing an oxidant. The investigation was conducted for a thermal ignition mechanism and transition from ignition to unsteady diffusive combustion. During the analysis, account was taken of the unsteadiness of the process of heat and mass exchange in the gas medium. It was established that on the basis of the nature of the process taking place, the transition from ignition to unsteady diffusive combustion may be represented as an aggregate of the successive stages: formation of an unsteady diffusive combustion front -- unsteady diffusive combustion.

1/1

USSR

UDC 536.46

MERZHANOV, A. G., RUMANOV, E. N., KHAYKIN, B. I., Moscow

"Multizone Burning of Condensed Systems"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, Nov/Dec 72, pp 99-105

Abstract: In the general case, combustion of condensed systems takes place in stages, and the combustion front is multizonal. Investigation of a two-zone model has shown that one of the zones predominates in multizone burning. The velocity of the front is equal to that of the predominant zone, but when there is a change in the parameters of the system, there may be a switch in the predominant role from one zone to another, as well as merging and splitting of zones. A generalization of the two-zone model with possibilities for transition to analysis of a complex multizonal front is considered, and it is shown that for a front with two reactions (in the condensed phase and in the gas) and dispersion, only three variants of the heat-releasing zones are possible (two three-zonal and one two-zonal). All possible types of relations are found for the burning rate as a function of the depth of dispersion.

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UDC: 536.46

USSR

GOL'DSHLEGER, U. I., BARZYKIN, V. V., MERZHANOV, A. G., Moscow

"Mechanism and Regularities of Ignition of Condensed Systems By a Disperse Flow"

Novosibirsk, Fizika Goreniya i Vzryva, No 3, 1971, pp 319-352

Abstract: This work is dedicated to investigation of the process of ignition of condensed substances under complex heat exchange conditions - ignition of the substance by a disperse flow (gas-solid particles). New experimental data are used and quantitative processing of the regularities established is performed on the basis of the simplest model of solid phase ignition. The process of ignition of nitrocellulose, polyvinyl nitrate and other explosives by a disperse stream is studied. The characteristics of the stream and softening point of the substances are found to influence the nature of the process significantly. An approximate theoretical model of the process is suggested. The results of numerical analysis based on this model agree well with experimental data.

UDC: 532.61

USSR

GRIGOR'YEV, YU.M., KHAYKIN, B.I., TROYAN, N.M., ~~NERZHANOV~~ A.G., Affiliate of the
Institute of Chemical Physics, Chernogolovka, Academy of Sciences USSR

"The Theory of Equilibrium of Drop Vaporization"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 3, Mar 70, pp 647-652

Abstract: General transfer equations in a two-component system are used as the basis in deriving a system of equations which describes the equilibrium of vaporization of a drop when the process takes place at high intensity. The characteristics of vaporization are calculated with regard to Stefan flux, the temperature dependence of the transfer coefficients, the overall pressure differential of the medium due to vaporization, and the difference between the molecular weight of the components of the medium. Expressions are derived for the rate of vaporization, the drop surface temperature, and dimensionless transfer numbers. Generalizing criteria are found which characterize the part played by Stefan flux. Corrections for the rate of vaporization are found which account for the temperature dependence of the transfer coefficients. The pressure differential in the gas is calculated. Vaporization of the drop in an atmosphere of the same vapor is considered. Calculations for water and ethyl alcohol by the proposed formulas show satisfactory agreement with the experimental data of various authors.

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USSR

UDC 536.46

STOLIN, A. M. and MERZHANOV, A. G.

"Critical Conditions of Thermal Explosion in the Presence of Chemical and Mechanical Thermal Sources"

Novosibirsk, Fizika Goreniya i Vzryva, vol 7, No 4, December 1971, pp 502-510

Abstract: On the basis of a simplified quasi-stationary approach to the solution of the thermodynamic problems proposed by the authors named above in an earlier article (Dokl. AN SSSR, 1971, 198, p 6), they derive analytically the conditions for thermal explosion for Couette flow in a viscous, reactive liquid. The explosion may be caused by chemical or mechanical sources of heat such as internal friction, a subject which has not received sufficient attention in the past. Cases of the viscosity as a different function of the temperature and as a different method for specifying the boundary conditions at the mobile limit are considered. The critical conditions for specified tangential tension and specified flow velocities are derived, and an example for computing the critical parameters is given.

1/1

USSR

UDC: 66.047

DERYAGIN, B. V., MERZHANOV, K. M.

"On the Problem of Designing a Diffusion Chamber with Time-Variable Temperature Conditions at the Wall and Supersaturation with Respect to Volume"

Minsk, Inzhenerno-fizicheskiy zhurnal, Vol 19, No 6, Dec 70, pp 983-990

Abstract: The authors investigate a simple heat transfer scheme which can be used to determine time-periodic temperature conditions at the wall of a diffusion chamber. An equation is derived and solved which describes the change in wall temperature with time. Analysis of the solution shows the possibility of three sets of conditions at the wall: $\omega \gg h/HG_0$, $\omega \ll h/HG_0$, $\omega \approx h/HG_0$, where $\omega = 2\pi/T$, T is the period of wall temperature variation, H is wall thickness, ρ is the density of the wall material, C is the specific heat of the wall material, and h is the heat-exchange coefficient. These sets of conditions present various experimental possibilities. A detailed analysis of all three sets of conditions is given, the optimum values of h_0 and γ_0 being determined for each of them, where γ is the product of duration and repetition frequency for the temperature cycle. Expressions are also examined

1/2

USSR

DERYAGIN, B. V., MERZHANOV, K. M., Inzhenerno-fizicheskiy zhurnal, Vol 19,
No 6, Dec 70, pp 983-990

which relate these quantities to the frequency ω . Data are given on the process of temperature wave propagation within the chamber. It is shown that ω is determined from conditions of temperature uniformity within the chamber. The resultant formulas can be used to determine all thermophysical data necessary for designing devices with a predetermined degree of temperature homogeneity and uniformity of supersaturation in the chamber. Two examples are given.

2/2

1/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--KINETICS OF THE THERMAL DECOMPOSITION OF DINITROXYDIETHYLNITRAMINE
IN THE ABSENCE OF GAS EXHAUST FROM THE REACTION ZONE -U-
AUTHOR-(04)-SAMOYLENKO, N.G., VINOKUROV, A.A., ABRAMOV, V.G., MERZHN OV,
A.G.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 39-42
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS

TOPIC TAGS--THERMAL DECOMPOSITION, EXHAUST GAS, ORGANIC NITRO COMPOUND,
CHEMICAL REACTION KINETICS, ACTIVATION ENERGY, AMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA ME--1995/1406

STEP NO--UR/0076/70/044/001/0039/0042

CIRC ACCESSION NO--AP0116853

UNCLASSIFIED

2/2 042

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116853

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A CALORIMETRIC METHOD IS DESCRIBED FOR DETN. OF KINETICS OF THE THERMAL DECOMPN. OF DINITROXYDIETHYLNITRAMINE WHEN REACTION PRODUCTS ARE NOT BEING REMOVED FROM THE REACTION ZONE. THE PRODUCTS ACT AUTOCATALYTICALLY, INCREASING THE REACTION RATE BY A FACTOR OF 100 AND DECREASING THE ACTIVATION ENERGY OF DECOMPN. FROM 45 TO 32 KCAL-MOLE. THE HEAT OF REACTION INCREASED 1.5 TIMES IN COMPARISON WITH THAT OBTAINED IN AN OPEN SYSTEM. THE TIME DEPENDENCE OF HEAT EVOLUTION SHOWS TWO MAX. FACILITY: INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

USSR

UDC 612.822.3+612.821.6

MERZHANOVA, G. Kh. and SERDYUCHENKO, V. M., Laboratory of Conditioned Reflexes, Institute of Higher Nervous Activity and Neurophysiology, Academy of Sciences USSR, Moscow

"Potentials Evoked by Stimulation of the Red Nucleus in the Case of Direct and Feedback Conditioned Associations"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 23, No 3, May/Jun 73, pp 632-635

Abstract: Experiments were conducted with cats to find how a feedback conditioned association is expressed electrographically. An electrode was implanted in the cats' red nucleus, and a conditioned food-getting response was developed in association with a feeder. It was found that potentials registered during a strong conditioned reflex had no extra components. However, tests for the feedback association, accomplished by electrical stimulation of the red nucleus in the absence of the feeder, evoked potentials which registered late, negative, low-amplitude components. Their latent phase fluctuated from 30-60 milliseconds in different cats. The presence of these components indicates the conditioned nature of the feedback association.

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- 56 -

AA0046271

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent,

2.-70

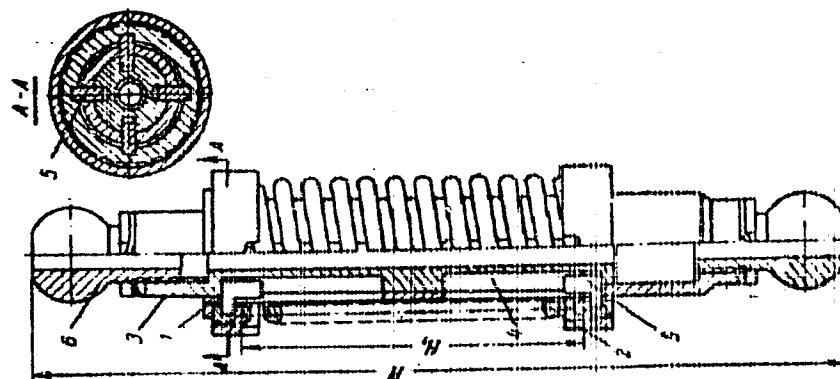
244815 SHOCK ABSORBER contains housing 1, torsion
spring 2 and shaft 3. In the shaft and
housing are longitudinal grooves 4 with profiled
sliding keys 5 which interact with the spring.
Under a load applied to support 6, according to
the direction of acting forces, the top or bottom
set of the keys compresses the spring. 11.10.67.
as 1190950/25-28, A.P. MERZLIKIN. (9.10.69.)
Bul.18/28.5.69. ~~CLASSIFIED~~ 161.

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AA0046271



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19781401

USSR

UDC 661.143:546.41'78

KRONRAYZ, V. G., MERZLYAKOV, A. T., KAPLENOV, I. G., GURVICH, A. M., and MIKHALEV, A. A.

Sb. nauch. tr. VNII lyuminoforov i asobo chist. veshchestv (Collection of Scientific Works From the All-Union Scientific Research Institute of Luminescence and Principles for Purifying These Compounds), Vyp 7, 1972, pp 72-74 (from Referativnyi Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8L162 by N. Sh.)

Translation: A preliminary study of the photostimulated luminescence allowed the establishment of the spectral characteristics of a series of basic capture centers in CaWO_4 and explained the relationship between the excited absorption bands and peaks of thermal-stimulated luminescence. This permitted the expectation that further study of the photostimulated luminescence in complexes by other methods would give useful information on the nature of the capture centers, the mechanism of the recombination processes, and the role of these factors in the luminescence of this interesting and industrially important class of luminescent compounds of the type CaWO_4 .

1/1

USSR

UDC 661.143

MERZLYAKOV, A. T., KRONGAUS, V. G.

"Infrared Stimulation of Some Powdered Luminophors"

Sb. nauch. tr. VNI lyuminoforov i osobo chist. veshchestv (Collection of Scientific Works of the All-Union Scientific Research Institute of Lumino-phors and Materials of Extreme Purity), 1972, vyp. 7, pp 75-77 (from RZh-Khimiya, No 6 (II), 1973, Abstract No 6L164)

Translation: Data are presented on the sensitivity to radiation with $\lambda \geq 1$ micron of a large group of polycrystalline luminescent compounds: ZnS:Pr, SrS:Ag, SrS:Eu, SrS:Cu, Ba₂P₂O₇:TiO₂, Y₂SiO₅:Ce, Y₂Al₅O₁₂:Ce, YBO₃:Ce, Y₂O₃:Nd and so on.

USSR

KRONROD, M. A., MERZLYAKOV, N. S., and YAROSLAVSKIY, L. P.

"Experiment in Hologram Reproduction Using Computers"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 2, 1972, pp 419-420

Abstract: The authors, members of IPPI (Institute of Information Transmission Problems) of the USSR Academy of Sciences, conducted an experiment on the Minsk-22 digital computer for the purpose of reproducing the image of an object from its hologram developed from a Fourier system. The results of this experiment, described as the first step in the use of a computer for this purpose, are given in the present paper. A hologram made in the A. F. Ioffe Physico-technical Institute was used in the experiment for the purpose of investigating the possibility of transmitting holograms over a phototelegraphic channel. The basic stages of the experiment are outlined, and three photographs showing an original hologram, its reproduction through the use of the computer, and its reproduction by laser are obtained. The authors note that the whole reproduction procedure using the computer takes about six hours of machine time on the Minsk-22.

1/1

USSR

MERZLYAKOV, Ya. A., "Belorussiya" Sanatorium, Sochi

"Pills? No, Psychotherapy!"

Minsk, Znannya Yunosti, 16 Feb 73, p 4

Abstract: Two techniques of psychotherapy are recommended for many disorders in which a psychogenic component may be present: hypnosis and autogenic training. Following a brief description of a routine session of hypnosis induced by a physician, several examples are given of individuals suffering from bronchial asthma, inflammation of the diencephalon, and stammering who responded to hypnotic suggestion after being unsuccessfully treated by drugs and other methods. Autogenic training or autosuggestion may be used in addition to hypnosis or in the absence of a psychotherapist to treat neuroses and some somatic diseases.

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UDC 547.836.3:542.944

USSR

KHOLODOV, L. Ye., MERZLYAKOVA, N. M., KOSTYUSHENKO, N. P., and SHCHUKINA, M. N., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Quinindines. V. Chlorination of 2,3-Polymethylenequinolines With Phosphorus Pentachloride"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 1, Jan 71, pp 91-95

Abstract: When reacted with excess PCl_5 in phosphorus oxychloride β -quinindane yield 1,1,2,3,3-pentachloro- β -quinindane; 1,2,3,4-tetrahydroacridine yields 3,4,4-trichloro-1,2,3,4-tetrahydroacridine; β -quinindanone-9 gives 3,3,9-trichloro- β -quinindane, and 1,2,3,4-tetrahydroacridone-9 gives 4,4,9-trichloro-1,2,3,4-tetrahydroacridine. When 1,2,3,4-tetrahydroacridine-9-carboxylic acid is chlorinated under analogous conditions, first an acyl chloride is formed which then converts to 4,4-dichloro-1,2,3,4-tetrahydroacridine-9-carboxylic acid. IR, UV spectroscopical data are reported, and PMR spectra are analyzed in detail.

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Acc. Nr:

AP0037019-

Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskii Zhurnal SSSR, 1970, Vol 56,
Nr 2, pp 288-291

ON A METHOD FOR STUDYING THE HYDRO-URETIC COMPONENT
OF THE OSMOREGULATION SYSTEM

A. K. Merson and L. V. Khorunzhiy

Clinic for Internal Diseases, State Medical Institute, Donetsk

Effect of intravenous administration of ethyl alcohol on the renal function was studied in practically healthy people under water deprivation. Minor doses (less than 0.5 ml 96% alcohol per 1 kg of body weight) proved to be ineffective. Greater doses (0.6—0.8 ml/kg) entailed a complete central blockade of the antidiuretic hormone (ADH) followed by a marked water diuresis approximately at the same time as after peroral water load. The described method proved useful for revealing the role of inappropriate ADH secretion in impaired hydrouresis. Thus, in patients with severe congestive heart failure and no hyponatremia, the excessive drinking of water and intravenous alcohol administration failed to cause hydrouresis, which gave ground to reject any connection between impaired hydrouresis and ADH hypersecretion in these patients.

D.n.

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19721955

Acc. Nr: **110043864**

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, PP 51-55

ELECTRON MICROSCOPIC STUDIES OF ANTIGENS
LOCALIZATION IN F. TULARENSIS WITH THE AID
OF FERRITIN-LABELED ANTIBODIES

Kats, L. N.; Mescheryakova, I. S.; Oglyevetskaya, M. M.

A study was made of localization of Vi- and O-antigenic complexes in the virulent (S), vaccine (SR) and avirulent (R) strains of F. tularensis with the aid of ferritin-labeled antibodies. Vi- and O- γ -globulins were marked with ferritin by Singer's method (1959). Vi- and O- γ -globulins were prepared from antisera obtained in immunization of rabbits with the S- and R-cultures of F. tularensis, respectively. Electron microscopic studies were carried out on intact microbial cells. Considerable amount of Vi-antigen of the virulent strain proved to localize along the whole thickness of the capsule-like coat, and O-antigen — on its surface. In avirulent strain O-antigen also localized along the whole capsule-like coat. The problem on localization of ferritin-labeled antibodies in other bacteria, and also on the structures of bacterial cells serving as the antigen-carriers is discussed.

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1/2 007
UNCLASSIFIED
PROCESSING DATE--11SEP70
TITLE--ON THE VOLUME AND POSITION OF THE CALLOWIAN STAGE OF ARCTIC REGION
-U-
AUTHOR--SAKS, V.N., MELEDINA, S.V., MESEZHNIKOV, M.S., SHULGINA, N.I.
COUNTRY OF INFO--USSR, ARCTIC OCEAN
SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 1 (121) PP 31-38
DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--POLAR AREA, ARCTIC GEOLOGY, GEOLOGIC FORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/1310

STEP NO--UR/0210/70/000/001/0031/0038

CIRC ACCESSION NO--AP0103192

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0103192

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE REASONABILITY OF THE CALLOWIAN
STAGE RELATION TO THE UPPER SERIES OF THE JURASSIC IS SHOWN BASED UPON
THE ARCTIC REGION DATA. IN THE CALLOWIAN OF THE ARCTIC ZOOGEOGRAPHICAL
PROVINCE SOME ZONES ARE DISTINGUISHED: ARCTICOCERAS KOCHI, CADOCERAS
ELATMAE (LOWER SUBSTAGE), CADOCERAS MILASCHEVICI (MIDDLE SUBSTAGE),
LONGAEVICERAS KEYSERLING (UPPER SUBSTAGE).

UNCLASSIFIED

USSR

UDC 629.76/.78.015:533.6

LUNDERSHTADT, R., MESH, F.

"Calculation of Aerodynamic Coefficients of Satellites"

V sb. Upravleniye v kosmose. T. 2 (Control in Space. Vol 2 -- Collection of Works), Moscow, "Nauka", 1972, pp 105-120 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B372)

Translation: Flow mechanics in rarefied gases are discussed and the different mathematical models are compared. These models are used to calculate the force and moment coefficients for satellites having a complex geometry. The results can be extended to a force and moments caused by solar pressure. 14 ref. Authors' abstract.

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- 18 -

1/2 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--COMPLICATIONS AFTER OPERATIONS ON THE STOMACH IN AGED PATIENTS -U-
AUTHOR--(03)--LECNTYEVA, N.S., MESHALKIN, I.N., OVCHININSKIY, N.N.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 6, PP 46-50
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SURGERY, STOMACH, GERONTOLOGY, TUMOR, PERITONEUM, SUTURE,
ARTERIAL ANASTOMOSIS, EMBOLISM, LUNG, CARDIOVASCULAR SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1783

STEP NO--UR/0531/70/000/006/0046/0050

CIRC ACCESSION NO--AP0129151

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129151

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS ANALYZE DATA OF 175 RADICAL OPERATIONS ON THE STOMACH (OF THEM 28 GASTRECTOMIES) PERFORMED FOR CANCER (108), PEPTIC ULCER (49) AND BENIGN TUMORS (12). CONCOMITANT DISEASES OF INTERNAL ORGANS WERE NOTED IN 101 PATIENTS. IN 54 PATIENTS IN THE POSTOPERATIVE PERIOD THERE WERE OBSERVED FUNCTIONAL DISORDERS OF INTERNAL ORGANS AND COMPLICATIONS, WHICH IN 7 CASES WERE THE CAUSE OF A LETHAL OUTCOME (4. PLUS OR MINUS 1.5PERCENT): 5 PATIENTS DIED FROM PERITONITIS DUE TO FAILURE OF ANASTOMOTIC SUTURES, 2 FROM EMBOLISM OF THE PULMONARY ARTERY. BESIDES, IN 8.7PERCENT OF PATIENTS THERE WERE SURGICAL COMPLICATIONS, IN 8.7PERCENT, CARDIOVASCULAR, IN 5.4PERCENT, PULMONARY, IN 3PERCENT, THROMBOEMBOLIC. THE AUTHORS EMPHASIZE THAT CONSTANT CLINICO FUNCTIONAL OBSERVATION OVER PATIENTS IN A SPECIALIZED POSTOPERATIVE DEPARTMENT ENSURES THE TIMELY DETECTION AND FUNCTIONAL DISORDERS OF INTERNAL ORGANS IN OPERATED PATIENTS AND THE REQUIRED CORRECTION OF THESE DISTURBANCES BEFORE THE DEVELOPMENT OF COMPLICATIONS.

UNCLASSIFIED

USSR

LUZINA, A. S., MESHALKIN, L. D.

"Processing of Large Files of Statistical Information on the BESM-3M Computer"

Preobrazovaniye i Obrabotka Inform. [Conversion and Processing of Information -- Collection of Works], Moscow University Press, 1972, p 4-9 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V651, by V. Mikheyev).

Translation: Some methods of processing of large files of statistical information on the BESM-3M computer during solution of a number of problems are described. Among the problems involved are: 1) the problem of classification of multidimensional objects with dimensionality of vectors on the order of several dozens; 2) creation of a constantly growing file of medical case histories (the number of possible coordinates may reach into the hundreds) for subsequent statistical processing; 3) processing of multidimensional random processes of great length, when the product of dimensionality times length reaches the order of hundreds of thousands. The methods developed as applicable to the BESM-3M digital computer, with its relatively small main memory and comparatively slow input, allow the input time and required memory volume to be

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USSR

Luzina, A. S., Meshalkin, L. D., Preobrazovaniye i Obrabotka Inform., Moscow University Press, 1972, p 4-9.

reduced. The methods described utilize the following programs: 1) program of primary inspection of material (construction of histograms, correlation matrices, conjugation tables and covariation matrices); 2) a leading program for organization of processing of multidimensional random processes; 3) a program for transfer of information from one system to another.

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1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--METHOD FOR CALCULATING MATERIAL AND ENERGY BALANCES OF COMPLEX
CHEMICAL ENGINEERING SYSTEMS -U-
AUTHOR--(03)-KAFAROV, V.V., PEROV, V.I., MESHALKIN, V.P. *mn*
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAJ. NAUK SSSR 1970, 192(3), 598-601 (CHEM TECHNOL)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CALCULATION, ENERGY THEORY, FLOW RATE, CHEMICAL ENGINEERING,
MATHEMATIC MATRIX
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3006/1218 STEP NO--UR/0020/70/192/003/0598/0601
CIRC ACCESSION NO--AT0134892
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AF0134892

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LOOP FLOW MODELS OF COMPLEX CHEM.
ENGINEERING SYSTEMS ARE DESCRIBED AND A MATH. NONITERATIVE MATRIX
APPROACH TO SOLVING MATERIAL AND ENERGY FLOWS OF SYSTEMS IS DEVELOPED
AND DISCUSSED. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IN.
MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

Surgery

USSR

MESHALKIN, Ye.

"The Future of Cardiac Surgery"

Baku, Bakinskiy Robochiy, 24 Feb 71, p 4

Abstract: Prof Yevgeniy Meshalkin, a prominent Soviet cardiac surgeon, Lenin Prize-Winner, and Honored Scientist of the RSFSR was one of the first surgeons who operated on the human heart. Today, he is head of the famous Institute of Cardiovascular Pathology in Novosibirsk. In his opinion, heart transplantation must wait until the problem of tissue incompatibility is resolved. In the meantime, the 3% of the world population who suffer from various heart conditions must be helped with corrective surgery and treatment preventing complications. To achieve results equivalent to the progress made in combating malaria or poliomyelitis, a state system of combating heart diseases must be established. One aspect of this project -- the state system of cardiosurgical aid -- is off to a good start in the Soviet Union. During the last 5 years, the Siberian Institute of Cardiovascular Pathology has participated in establishing seven more cardiology centers in the USSR. However, a great number of well trained cardiologists are needed, intensive research

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USSR

MESHALKIN, Ye.. Bakinskiy Robochiy, 24 Feb 71, p 4

must supply answers to many questions, old techniques must be improved and new ones developed to facilitate surgery, diagnosis, and preventive treatment. It is most important that organization be streamlined so that all resources are utilized as soon as they become available. The final goal is to offer free cardiovascular service to every person who needs it.

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USSR

UDC 616-036.882-08:615.471:616.127:616-089.583.29

MESHALKIN, Ye. N., RED'KO, Ye. S., STUNZHA, Ye. A., SADOCHIKOV, I. V.,
FILIMONOV, Ye. S., and SERGEYEV, Ye. N., New Siberian Scientific Research
Institute of the Pathology of Circulation, Ministry of Health RSFSR

"Resuscitation of the Organism After Prolonged Clinical Death by Means of an
Artificial Circulation Apparatus in Association With Hemodilution and Hypo-
thermia"

Kiev, Vrachebnoye Delo, No 4, 1973, pp 73-77

Abstract: To refine the method, experiments were conducted on 72 anesthetized
dogs in which uni- or bilateral thoracotomy was performed and clinical death
(disappearance of EEG waves) caused by discontinuation of artificial respira-
tion and induction of cardiac arrest. Eight to 18 min after clinical death,
resuscitation was begun with blood flow maintained by a pump either through
the coronary and carotid arteries or through the whole body at rates of 60-120
ml/kg/min, under normothermia or hypothermia, with utilization of heparinized
donor blood or a plasma expander to achieve hemodilution. The total perfusion
time was 40-60 min. Resuscitation was considered successful if normal EEG,
effective heart activity, spontaneous respiration, renal function, motor
activity, and unconditioned and some conditioned reflexes were restored. The
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USSR

MESHALKIN, Ye. N., et al., Vrachebnoye Delo, No 4, 1973, pp 73-77

optimal conditions -- whole-body perfusion at a rate of 80-100 ml/kg/min, with blood diluted to about 6-8 g% Hb, and a hypothermia of 28-30°C achieved in 5-8 min -- yielded a recovery rate of 80%. This method was subsequently applied on 19 patients during cardiac surgery complicated by cardiac arrest and failure of all other therapeutic measures. Five patients were successfully resuscitated; they recovered and were eventually discharged from the hospital in satisfactory condition. The case history of a 12-year old cardiac surgery patient is given.

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USSR

UDC 616.927-085.371:576.851.49]-039.71-032:611.3]-036.8

MESHALOVA, A. N., KURLOVA, V. I., TELESHEVSKAYA, E. A., BABINA, V. P.,
GOKHSHTIYN, S. E., LIROVA, B. M., LAVROVSKAYA, V. M., TANABIN, Yu. A., and
NEGINA, Yu. I., Moscow Institute of Vaccines and Sera imeni Meehnikov,
Gor'kiy Institute of Epidemiology and Microbiology, and Moscow Municipal and
Kuntsevo Sanitary Epidemiological Stations

"Peroral Immunization of Humans with Typhoid Vaccines in a Strictly Controlled
Experiment"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 71-77

Abstract: Following a successful trial of enteral immunization of children with
heated typhoid vaccine, larger doses of the same vaccine - heated and chemical -
contained in sugar-coated tablets were given in a double-blind test to 1225
children age 3 to 15 and 274 adults in 2 equal doses 15 to 30 days apart. The
reactions to the vaccine were mild and they generally occurred after ingestion
of the first tablet: in 13.60% and 9.31% those who took the heated and chemical
vaccines, respectively (in 5.88% of those who received placebo). Both vaccines
produced high antibody titers against the O, Vi, and H antigens in the sera of
the children as well as the adults. The authors recommend a major epidemiologi-
cal trial of the vaccines in regions with a high incidence of typhoid.

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USSR

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSECHIKOV, A. A.,
DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P.,
MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV,
Ye. V., SISKIN, V. V., SOLOV'YEV, L. P., and SOLOV'YANOV, V. L., Institute
of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of
High-Energy Particles"

Moscow, Priory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at
the Institute of High-Energy Physics, for investigation of the elastic scat-
tering of high-energy particles within the pulse range of 30-60 gigaelectron
volts/sec. The range of dispersion angles covered by the installation is
0-29 millirads with an angular resolution of ± 0.17 millirad. The total
solid angle is 39 microsteres. The pulse is determined to within $\pm 0.22\%$.
The resolving time is 35 nanosec. The dead time is 30 microsec. The pulse
pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per
hour. The installation is electrically coupled to a "Minsk-22" computer,
which stores and processes the information during the experiment. The
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USSR

BORISOV, A. A., et al., Priory i Tekhnika Eksperimenta, No 3, May/Jun 73,
pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^- -mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

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UDC 669.15'26'786-194

USSR

ALEXSEYEVA, G. P., and MESHCHANINOV, B. N.

"Low-Alloy 12% Chrome Steel With Nitrogen"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov,
No 8, 1970, pp 12-14

Abstract: A study was made to find a steel with a higher creep limit than the refractory steels 1Kh12N2VM7 (Kh196L) and 91-736. The 12%-chromium steel investigated had no nickel but did contain nitrogen, and had a total of 1-1.5% of carbide-forming elements other than the chromium. The carbon content of the investigated samples was between 0.14 and 0.23%. A table gives chemical compositions 10 samples of the 12%-chromium steel and for the 1Kh12N2VM7 steel. A second table and a curve show the effect of tempering on the steel samples. X-ray analysis of the specimens after full thermal processing and after creep tests performed for 500 hours at 600° C showed that the toughening phase was $M_{23}C_6$ and $M(CN)$. The steel samples were also tested for mechanical characteristics and corrosion in distilled water, under local and tropical atmospheric conditions, and showed satisfactory immunity to corrosion for five to six months. If the steel is to be used in cast form, the nitrogen must be replaced by nickel.

USSR

ALEKSEYEVA, G. P., and MESHCHANINOV, B. N.. Metallovedeniye
i Termicheskaya Obrabotka Metallov, No 8, 1970, pp 12-14

to the extent of 0.9-1.0%.

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UDC 51

USSR .

MESHCHANINOV, L. S., MEZVRISHVILI, T. YE.

"A problem of Constructing a Calendar Plan"

Mekhaniz. ucheta i vychisl. rabot. Mezhd. nauch. sb. (Mechanized Accounting and Computation Operations. Interdepartmental Scientific Collection), 1972, vyp. 14, pp 124-136 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V531)

Translation: A study was made of the problem of the best distribution of limited manpower for enterprises with a multirequest plan of development, and the method of solving this problem based on the multinet network models is discussed. Each operation of the PERT charts is executed by a group of resources of different type where the composition of each group is put together during the process of compiling the calendar plan for the operation of the enterprise. For the operations entering into the separate sections of the PERT charts in a special form, the problem of determining the optimal intensity of their execution is solved using the methods of linear programming. For the remaining operations of the PERT charts a heuristic algorithm of resource distribution is proposed.

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UNCLASSIFIED

PROCESSING DATE--160CT70

IRC ACCESSION NO--AT0054602

BSTRACT/EXTRACT--(U) GP-G- ABSTRACT. THE FALLOUT LEVELS AND CONCENTRATIONS OF GAMMA RADIATING PRODUCTS OF NUCLEAR EXPLOSIONS IN THE SURFACE AIR IN THE VICINITY OF MOSCOW FOR THE PERIOD FROM 1962 TO 1967 ARE PRESENTED. MONTHLY FALLOUT LEVELS OF PRIME141 CE, PRIME144 CE, PRIME137 CS, PRIME54 MN, PRIME95 NB PLUS PRIME95 ZR, PRIME103 RU, AND PRIME106 RH PLUS PRIME106 RU ARE TABULATED AND PLOTTED. FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

UNCLASSIFIED

USSR

UDC: 621.385.530.145.6.77

MESHCHANKIN, V. M.

"A Device for Taking Microwave Holograms and Making the Restored Image Visible"

USSR Author's Certificate No 275257, filed 18 Mar 69, published 13 Oct 70
(from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D511 P)

Translation: This Author's Certificate introduces a device for taking microwave holograms and making the restored image visible. The device contains a microwave oscillator, an antenna which exposes the space to be holographed, a reference wave antenna, a band filter, a mixer and a reference oscillator. As a distinguishing feature of the patent, a real-time image is obtained without using coherent light sources by employing a multichannel receiver with double frequency conversion for receiving signals in the plane of the hologram. The second mixers of this receiver are connected to the reference oscillator through a system of phase shifters and a frequency multiplier, while the receiver outputs are connected to incoherent light sources with controllable brightness through series-connected ultrasonic converters and ultrasonic receivers. The illuminated cross section of the holographed space is selected by changing the frequency of the reference oscillator.

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1/2 055 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--HOLOGRAPHY IN THE MICROWAVE BAND WITH ARTIFICIAL FORMATION OF THE
REFERENCE WAVE -U-
AUTHOR--(02)-GINZBURG, V.M., MESHCHANKIN, V.M.
COUNTRY OF INFO--USSR
SOURCE--RADIOTEKHNIKA I ELEKTRONIKA, VOL. 15, APR. 1970. P. 778-781.
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--HOLOGRAM, MICROWAVE, LASER APPLICATION
CENTRL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1662 STEP NO--UR/0109/70/015/000/0778/0781
CIRC ACCESSION NC--AP0118641
UNCLASSIFIED

2/2 055

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0118641

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF MICROWAVE HOLOGRAPHY WITH AN ARTIFICIALLY FORMED REFERENCE WAVE AND A RECEIVER MULTIPLIER APPARATUS THAT MAKES IT POSSIBLE TO RECORD A HOLOGRAM AT REFERENCE WAVE ANGLES OF INCIDENCE MUCH SMALLER THAN THOSE IN OPTICAL SYSTEMS. HOLOGRAMS WERE RECORDED AT A FREQUENCY OF 9.37 GHZ, AND LASER RECONSTRUCTED IMAGES ARE GIVEN FOR ILLUSTRATION. THE PROPOSED METHOD MAKES IT POSSIBLE TO BRING THE OBJECT CLOSER TO THE HOLOGRAM AND THUS IMPROVE THE LINEAR RESOLUTION IN THE IMAGE.

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